



**U.S. DEPARTMENT OF ENERGY  
ROCKY FLATS ENVIRONMENTAL  
RESTORATION MANAGEMENT**

**DOE-RFFO  
ENVIRONMENTAL  
RESTORATION  
PROGRAM**

**Monthly Report for  
June 1995**



**July 1995**



## **ACRONYMS**

CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
COD	Corrective Action Decision
DOE	U. S. Department of Energy
EPA	U. S. Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FY	Fiscal Year
IA	Industrial Area
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
OU	Operable Unit
RCRA	Resource Conservation and Recovery Act
RFFO	Rocky Flats Field Office
RFI	RCRA Facilities Investigation
RI	Remedial Investigation
ROD	Record of Decision
Site	Rocky Flats Environmental Technology Site
TM	Technical Memorandum



<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	S. M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde Water	SAIC/Wright		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for groundwater, surface water, and sediment	Jul 90
SW	QA	Support	SAIC	Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S. M. Stoller		Program Management Support	Oct 92
PM	QA Support	SAIC		Provide Quality Assurance /Quality Control support to ER Program	Nov 92



<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
12	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
13	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
14	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
15	Assessment	ERM-Rocky Mtn.	G. S. Miller, Inc.	Implementation of the RFI/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Admin. Record	Oct 90
SW	Geo. Char.	Jacobs Eng		Well Abandonment and Replacement	Mar 93
SW	Geo. Char.	Colorado State University		Support master's thesis of Structural Geology, of Front Range Area near Rocky Flats	Nov 91
SW	Geo. Char.	S. M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters-level training program in Engineering Science and Engineering	Aug 92
SW	Geo. Char.	Woodward-Clyde		Support for the Soil Water Monitoring System	Feb 93
SW	Geo. Char.	Colorado State University		Sequential Extraction	Apr 92
SW	Geo. Char.	University of Colorado		Monitoring Vadose Zone	Jun 92



<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
4	Remediation	Halliburton		Develop Treatability Study and Conceptual Design for Pond Sludge Processing	Aug 94
5	Assessment	ASI	Dames & Moore Blackhawk Geo Walsh & Assoc. Adv. Terra Testing	Implementation of OU 5 Work Plan through completion of the RFI/RI(excluding Environmental Evaluation)	Jun 92
5	Assessment	S. M. Stoller		Implementation of the OU 5 RFI/RI Environmental Evaluation	Sep 92
5	Assessment	Metcalf & Eddy	Rust	Implementation of the FS	Sep 94
6	Assessment	Woodward-Clyde	Lane, Ogden, Geo Envir	OU 6 RFI/RI Work Plan and Quality Assurance Addendum	Aug 92
6	Assessment	S. M. Stoller		Implementation of the Environmental Evaluation Section of OU 6 Work Plan	Sep 92
7	Assessment	S. M. Stoller	Walsh & Assoc.	OU 7 revised Work Plan development and implementation. IM/IRA Decision Document development.	Nov 92
8	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
9	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
10	Assessment	Jacobs Eng.	Walsh & Assoc.	Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs	Aug 93
11	Assessment	S. M. Stoller		Implement the RFI field work and report writing	Jan 94



## **SECTION 4.0 SUBCONTRACTOR IDENTIFICATION**

Subcontractors being used on the Rocky Flats Environmental Technology Site ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Dames & Moore		CMS/FS Report	Jan 92
1	Remediation	Resource Tech.		B-891 Treatment System Operations Group, Inc., (RTG)	
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Feb 92
2	Assessment	Woodward-Clyde	Layne	OU 2 RFI/RI Work Plan (bedrock) surficial soils	Mar 93
2	Remediation	RTG		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Jan 91
2	Soil Vapor Extraction	Woodward-Clyde		Operation of Soil Vapor Extraction	1993
3	Assessment	CH2M Hill		RI Report	Apr 92
4	Remediation	Halliburton	Halliburton	Demobilize	Sep 91
4	Assessment	Parsons/Eng Science	Rust I&E	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Remediation	Parsons/ Eng Science		Development of IM/IRA Decision Document and conceptual design	
4	Remediation	ERM-Rocky Mountain	Geraghty & Miller	Post-Closure Monitoring Plan	Nov 93
4	Remediation	Halliburton		Develop Treatability Study for Pondcrete	Aug 94



Groundwater samples are routinely sampled for the following:

Radiochemical Parameters

Gross Alpha  
Gross Beta  
Plutonium  
Americium  
Strontium  
Tritium  
Uranium  
Cesium

Inorganic Parameters

Nitrate/Nitrite  
Phosphorous  
Ammonia  
Total Dissolved Solids  
Chlorine  
Fluorine  
Sulfate  
Carbonate  
Bicarbonate  
Total Suspended Solids  
Dissolved CLP<sup>1</sup> and additional metals  
Cyanide  
CLP<sup>1</sup> Volatile Organic Constituents

*CLP = Contract Laboratory Program*

Field Parameters

Specific Conductivity  
Temperature  
Turbidity  
pH



### IAG Compliance Monitoring

Routine monitoring for IAG/CERCLA objectives is done at selected Interim Measure/Interim Remedial Action (IM/IRA) facilities to monitor water-treatment performance and at Industrial Area storm water and building outfalls for the Industrial Area IM/IRA Transition Verification Monitoring Program (IA IM/IRA). Samples are collected quarterly at three locations (SW039, SW060, and SW132) in the OU2 Mound Area to evaluate the performance of the OU2 IM/IRA treatment facility. Quarterly samples from the OU4 Interceptor Trench Sump (a.k.a. Central Sump) have been collected to monitor potential impacts of contaminated groundwater from OU4 to North Walnut Creek. OU1 monitoring occurs quarterly at stations SW035, SW036, SW038, SW070, and the Building 881 Footing Drain (SW13494).

The IA IM/IRA monitoring program uses 13 continuously recording stream gaging stations located in and immediately adjacent to the Site Industrial Area to monitor the quantity and quality of storm water runoff from areas where Transition activities (waste management, material stabilization, decontamination/decommissioning) are occurring or are scheduled to commence. The gaging stations are equipped with flumes or weirs and continuously recording flow meters that are linked to automatic water samplers. The automatic samplers are triggered by the flow meter to collect storm water runoff and/or discharges from buildings via footing drains and various other sources. Selected IA IM/IRA stations also include continuously recording water-quality probes and radio telemetry equipment for real-time data acquisition and supervisory control of the monitoring equipment. Samples are collected once per month at each station provided that water (i.e., storm runoff) is present at the stations. Expansion of the IA IM/IRA monitoring network will evolve with the expansion of Industrial Area Transition activities. The following is a list of the IA IM/IRA program analytical protocol.

- total metals
- dissolved metals
- total radionuclides (plutonium, uranium, americium)
- radiation screen
- water quality parameters
- nitrate/nitrite
- total phosphorous
- volatile organics
- semi-volatile organics
- pesticides/PCBs
- total organic carbon.

### **3.2 SOILS**

Each of the soil stations (located at 1- and 2-mile radii from the site center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

### **3.3 GROUNDWATER**

Unusually wet conditions during May restricted access to some of the wells in the buffer zone due to flooding and deep mud. Some areas did not dry out for access until mid-June.

During the month of June, 104 wells were sampled and 12 weekly water level measurements were ongoing. Of the 104 wells sampled, 60 were semi-annual wells and 44 were quarterly wells.

For the second quarter 1995 a total of 299 wells were sampled--229 quarterly and 70 semiannual wells. Forty-six wells were sampled in the PA. Seventy-one wells were classed as RCRA wells.



### **SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING**

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDPHE upon request. The schedules are lengthy, and, therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and obtain split or duplicate samples.

#### **3.1 SURFACE WATER AND SEDIMENTS**

##### **Clean Water Act and AIP Compliance Monitoring**

Routine Site surface-water monitoring is accomplished by the Surface Water Group. Monitoring for NPDES permit compliance occurs daily at selected NPDES-permitted outfalls. Site detention ponds A-4, B-5, and C-2 are sampled prior to discharge of the ponds to assure that water quality meets Big Dry Creek Basin Segment 5 water-quality standards. The detention pond monitoring is done to comply with the Agreement in Principle (AIP) between DOE, the State of Colorado, and the local communities. In addition, Pond C-1 has been monitored on a weekly basis to evaluate radionuclide content of Woman Creek which discharges off-site continuously. A routine spill-control monitoring program is implemented as a Best Management Practice to evaluate the quality of waters contained in valve vaults, utility pits, secondary containment structures, and other areas, for selection of appropriate treatment alternatives. The following indicates the general sampling locations and approximate average sample collection frequency for compliance monitoring.

<u>Location</u>	<u>Sampling Frequency</u>
995 Effluent	37
Pond B-3	16
Pond A-4 Dis.	40
Pond A-4/B-5	31
Pond A-4/B-5/C-2	27
Pond C-2	9
Pond C-2 Dis	7
Pond A-3 Dis.	4
Pond A-3	2
Pond B-5 Trans.	1
New Landfill	4
995 Effluent	18
995 Influent	16
Walnut & Indiana	10
Pond C-1	16
Terminal pond	3
750/904 Pads	3
"Ponds A1,A2,"	8
Monthly	250
Annual	2997



**Future Milestones  
Through FY96**

None

**June Work Activity Status**

**Sitewide Activities**

**Sitewide Treatability Studies**

Cleanup and Recover (CURE) Waste Water Treatment System Site Demonstration - During June 1995, the following items or issues were covered:

1. The DOE RFFO has completed a NEPA Categorical Exclusion determination for this project.
2. The EPA has approved the Final Draft Demonstration Plan and Quality Assurance Project Plan (QAPP).
3. The Integrated Work Control Program (IWCP) work package is completed. Approval is awaiting completion of the Health and Safety Plan which is nearly done.
4. The Project Management Plan is being reviewed by the EPA.
5. All training for offsite personnel has been completed.
6. Lung counts have been completed for 9 of 11 offsite persons scheduled to work at the CURE site. The remaining two have been scheduled.
7. The public demonstrations has been rescheduled from August 9 to August 22, 1995.
8. The CURE equipment was inspected by RFETS Safety and Radiological Engineering representatives. No major problems were found.

**Planned Work for July**

**Sitewide Activities**

- Sitewide Treatability Studies will continue normal activities.

**Problems**

Vendor delays have slipped the schedule two weeks. Any additional vendor delays will affect FY95 project completion. No funding is scheduled for FY96.

**Open Items**

None



## 2.16 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that comprise a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to the general Rocky Flats Environmental Technology Site ER activities. Activities include, but are not limited to, the Health and Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

### Scope of Work

Changes This Period

None

### Technical Approach

Changes This Period

None

### IAG Milestone

#### Accomplishments

Submit Draft Background Study Report (Water)	15 Dec 89
Submit Draft Background Study Report (Soils)	15 Dec 89
Submit Draft Community Survey Plan	23 Jan 90
Submit Final Community Survey Plan	22 Mar 90
Submit Draft Health and Safety Plan	15 Aug 90
Submit Draft Quality Assurance Project Plan	29 Aug 90
Submit Draft Standard Operating Procedures	29 Aug 90
Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
Submit Draft Treatability Study Plan	21 Sep 90
Submit Draft Community Relations Plan	01 Nov 90
Submit Final Health and Safety Plan	12 Nov 90
Submit Revised Background Study Report	21 Dec 90
Submit Final Community Relations Plan	22 Jan 91
Submit Final Quality Assurance Project Plan	01 Mar 91
Submit Final Standard Operating Procedures	01 Mar 91
Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
Submit Community Relations Plan Responsiveness Summary	21 Jun 91
Submit Final Treatability Study Plan	03 Jun 91
Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary	25 Nov 91
Submit Draft Historical Release Report	08 Jan 92
Submit Responsiveness Summary for Radionuclides Discharge Limits Plan	31 Jan 92
Submit Final Historical Release Report	03 Jun 92
Submit Annual Treatability Study Report	08 Mar 93
Submit Annual Treatability Study Report	04 Mar 94
Submit Draft IA IM/IRA Decision Document	23 Mar 94
Submit Draft IA IM/IRA Responsiveness Summary	28 Oct 94
Submit Final IA IM/IRA Decision Document	21 Nov 94
Submit Final Annual Treatability Study Report	10 Mar 95



**June Work Activity Status**

On June 21, 1995 the Public Hearing for the Proposed Plan/Draft RCRA Permit modification was completed.

**Technical Memoranda****Project****OU 15 - Inside Building Closures****TM #1****TM Title****TM Status****Field Sampling Plan**

When preparation is estimated to be concluded:

Projected date of submittal to EPA/CDPHE: 28 Feb 94

Actual date of submittal: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94 (Formal 04 May 94, EPA; 07 Apr 94, CDPHE)

**TM #2****TM Title****TM Status****Human Health and Risk Assessment**

When preparation is estimated to be concluded:

Actual date the Final TM submitted to EPA/CDPHE: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94 (Formal 04 May 94, EPA; 07 Apr 94, CDPHE)

**Planned Work for July**

- The Draft Corrective Action Decision/Record of Decision will be reviewed by the regulatory agencies.

**Problems**

None

**Open Items**

None



## **2.15 OU 15 - INSIDE BUILDING CLOSURES**

OU 15 is comprised of the following six IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

Closure Plans for the IHSSs were submitted to CDPHE during 1988 and 1989. The IHSSs were also included in the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, EPA, CDPHE, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (6 CCR 1007-3 Part 265.111) will serve as the applicable or relevant and appropriate requirements for the OU 15 RFI/RI inside buildings for hazardous materials, and 29 CFR 1000.46 will serve as the applicable or relevant and appropriate requirements for the OU 15 RFI/RI inside buildings for radionuclides.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA FO.01 and FO.02 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. No known spills or releases occurred. Characterization is complete. Results show no contamination present and no evidence of release of contaminants.

### **Scope of Work**

#### **Changes This Period**

None

### **Technical Approach**

#### **Changes This Period**

In an agreement between the regulatory agencies and DOE, the Final Proposed Plan and Draft RCRA Permit Modification remedy is as follows:

- All six OU 15 IHSSs will be clean closed according to RCRA.
- IHSSs 178, 211, and 217 will be No Action.
- IHSSs 204, 179, and 180, as part of the respective buildings and not as IHSSs, will be deferred until final building disposition.

### **IAG Milestone**

#### **Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
Submit Final Phase I RFI/RI Work Plan	26 Oct 92
Submit Draft Phase I RFI/RI Report	25 Jul 94
Submit Final Phase I RFI/RI Report	16 Dec 94

### **Future IAG Milestones**

#### **Through FY 95**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Corrective Action Decision/ Record of Decision			30 Sep 95



**June Work Activity Status**

Final approval was received and the controlled procedure was issued for the Pushed Subsurface Soil Sampler.

The OU 14 Data Summary Report (DSR) for the completed Stage I Field Investigation was completed the week of June 19, 1995.

**Technical Memoranda****Project****OU 14 - Radioactive Sites****TM #1****TM Title****TM Status****Results of Nonintrusive Field Investigations**

Projected date of submittal to EPA/CDPHE: 29 Jan 96

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

**Planned Work for July**

- If the Stop Work Order is lifted, the preparation of the OU 14 TM #1 will restart.
- Transition to the new DOE subcontractor and reorganization of the Environmental Restoration Program Division will be completed.

**Problems**

Stop Work Order for the Industrial Area Operable Units may delay the completion of the Technical Memorandum for Stage I Field Investigations.

**Open Items**

None



## **2.14 OU 14 - RADIOACTIVE SITES**

Work at the Radioactive Sites comprises the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area, loading dock north of Building 776 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSS 156.1); Building 444 Parking Lot (IHSS 160); southwest of Building 664 (IHSS 161); Radioactive Site along 8th Avenue (IHSS 162); Radioactive Sites - 800 Area that includes the concrete slab north of Building 850, and Building 886 Spills; and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will proceed in three steps. The first step, which has been completed is preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and FS of the project. This process includes review and approval by the EPA and the CDPHE followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

## Scope of Work

Changes This Period	None
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## Technical Approach

**Changes This Period**

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 14. The technical scope for OU 14 remains the same.

## **IAG Milestone Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
Submit Final Phase I RFI/RI Work Plan	19 Oct 92

## Future iAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Dec 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	23 May 95	Stop Work Order	To be determined*

- To be determined pending IA reconfiguration.



## June Work Activity Status

Work has begun on compiling the data for Technical Memorandum #2, *Results of the Nonintrusive Field Investigations*. The first draft has been completed and reviewed. A comment meeting was held May 25, 1995. The Final Draft is scheduled for completion June 16, 1995 and review, with the final delivery on July 3, 1995.

## Technical Memoranda

### Project

### OU 13 - 100 Area

#### TM #1

#### TM Title

#### TM Status

Addendum to Field Sampling Plan

When preparation was concluded: Feb 94

Projected date of submittal to EPA/CDPHE: Feb 94

Actual date of submittal: 03 Mar 94

Date EPA/CDPHE comments were received: 16 May 94

#### TM #2

#### TM Title

#### TM Status

Results of the Nonintrusive Field Investigations

Projected date of submittal to EPA/CDPHE: 07 Feb 96

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

## Planned Work for July

- Final comments on the Draft Data Summary will be transmitted to DOE on July 3, 1995.
- Transition to the new DOE subcontractor and reorganization of the Environmental Restoration Program Division will be completed.
- All activities permitted under the Industrial Area Operable Units Stop Work Order Implementation Plan have been completed for Operable Unit 13 and no further activities will occur until the Stop Work Order is lifted.

## Problems

None

## Open Items

New agreement with regulatory agencies needs to be negotiated to establish new milestone dates for the Industrial Area Operable Units.



## 2.13 OU 13 - 100 AREA

Cleanup of the 100 Area comprises the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2, and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will proceed in three steps. The first step, which has been completed, consists of preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan in which field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a FS, which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 13 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work Changes This Period

This OU is under a Stop Work Order. No further characterization will be pursued at this time; however, preparation of a Data Summary Report for Nonintrusive Field Investigations will proceed.

### Technical Approach Changes This Period

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 13. The technical scope for OU 13 remains the same.

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	15 May 92
Submit Final Phase I RFI/RI Work Plan	12 Oct 92

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	08 Aug 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	11 Jan 95	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.



Technical Memorandum #2, *Summary of Non-intrusive Field Investigations*, is being brought "in-house" for completion to draft from preliminary draft. However, due to recent budget cuts, funding for this activity is in question.

## **Technical Memoranda**

### **Project**

### **OU 12 - 400/800 Area**

#### **TM #2**

#### **TM Title**

#### **TM Status**

#### **Summary of Nonintrusive Field Investigations**

Projected date of submittal to EPA/CDPHE: Delayed due to the Stop Work Order. New deliverable date to be determined.

Actual date of submittal: To be determined

Date EPA/CDPHE comments were received: To be determined

### **Planned Work for July**

- If the Stop Work Order is lifted, DOE and the Rocky Flats Environmental Technology Site review of the OU 12 Preliminary Draft Nonintrusive Summary TM may continue.
- Due to the Stop Work Order issued in March 1995, activities for the IA OUs will be brought to a logical closure point as per the Implementation Plan submitted in May 1995.
- Transition to the new DOE subcontractor and reorganization of the Environmental Restoration Program Division will be completed.

### **Problems**

Stop Work Order issued in March 1995 will delay characterization activities, other events, and milestones.

### **Open Items**

New agreement with regulatory agencies needs to be negotiated to establish new milestone dates for the Industrial Area Operable Units.



## 2.12 OU 12 - 400/800 AREA

The 400/800 Area comprises assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

The Phase I RFI/RI Work Plan, which includes both an Environmental Evaluation and a Human Health Risk Assessment, has been completed. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area may be conducted as part of the assessment.

Based on results obtained during the assessment phase of the project, remediation may consist of the development and execution of a Remedial Action Plan. This process includes review and approval by the regulatory agencies followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work

#### Changes This Period

None

### Technical Approach

#### Changes This Period

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in OU 12. The technical scope for OU 12 remains the same.

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 May 92
Submit Final Phase I RFI/RI Work Plan	05 Oct 92

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	15 Sep 94	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

### June Work Activity Status

DOE issued a Stop Work Order in March 1995. The Stop Work Order is and will continue delaying current schedules. Many events and milestones will remain unrecoverable.



The Public Comment Period for the Proposed Plan/Draft Modification of the CHWP for OU11 began on June 28, 1995.

## **Technical Memoranda**

### **Project**

### **OU 11 - West Spray Field**

TM

TM Title

TM Status

Revised Field Sampling Plan and Data Quality Objectives

Submitted to EPA/CDPHE: 31 Mar 94

TM approved

TM #1

TM Title

TM Status

Exposure Scenarios

Canceled

TM #2

TM Title

TM Status

Modeling

Canceled

TM #3

TM Title

TM Status

Contaminants of Concern

Canceled

TM #4

TM Title

TM Status

Toxicity

Canceled

### **Planned Work for July**

- The Public Hearing for the Proposed Plan/Draft Modification of the Colorado Hazardous Waste Permit for OU11 is scheduled for July 19, 1995.
- Work on Draft Corrective Action Decision/Record of Decision

### **Problems**

None

### **Open Items**

None



## 2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Environmental Technology Site buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from Solar Evaporation Ponds 207B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 38 of which received direct application of solar pond water. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

### Scope of Work

**Changes This Period** None

### Technical Approach

**Changes this Period** None

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	02 Jan 92
Submit Draft Phases (combined) RFI/RI Report	28 Apr 95
Submit Draft Proposed Plan	10 May 95

### Future IAG Milestones Through FY 95

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RFI/RI Work Plan	21 Aug 95		Deleted
Submit Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95		Proposed elimination
Submit Final Phase II RFI/RI Work Plan	24 Jan 96	24 Jan 96	Proposed elimination
Submit Final Phase I Proposed IM/IRA Decision Document	14 Mar 96	14 Mar 96	Proposed elimination
Submit Phase I IM/IRA Responsiveness Summary	22 Jul 96	22 Jul 96	Proposed elimination

### June Work Activity Status

The final combined Phases RFI/RI Report was submitted to the regulatory agencies on June 8, 1995 for their approval.

The regulatory agencies approved the Final Combined Phases RFI/RI Report on June 13, 1995.

Certification of RCRA Clean Closure (independent engineer) for OU11 was submitted to CDPHE on June 19, 1995.

The Final Proposed Plan/Draft Modification of the Colorado Hazardous Waste Permit (CHWP) for OU11 was submitted to the regulatory agencies on June 20, 1995.



**Problems**

If the IA SWO is not resolved, it has the potential to significantly disrupt the flow of work and the progress of the project. If field crews are lost to other projects while the SWO is in effect, much greater than day-for-day schedule and cost impacts are possible.

Comments from the DOE and the regulatory agencies for Draft TM #1 have not been received.

**Open Items**

The Draft TM #1 comments were scheduled to be received from the regulatory agencies in February 1995 but have not been received to date.



## June Work Activity Status

Under the terms of the SWO issued in March 1995, work continues on sampling and analysis, but data evaluation and development of recommendations are not being performed. The SWO will be in effect until the DOE can negotiate the Rocky Flats Cleanup Agreement, which will contain new milestones for the IA OUs. Integral to the negotiation of this agreement is the approval of the IA OU Reconfiguration Plan, which was submitted to the regulatory agencies in November 1994.

The Draft TM #1 comments were scheduled to be received from the regulatory agencies in February 1995 but have not been received to date. The schedule for the delivery of the OU 10 Final Phase I Nonintrusive TM #1 is in jeopardy of being significantly delayed from the preliminary schedule developed in June 1994. Further delays in receipt of comments will result in a day-for-day slippage of the Final document delivery schedule.

The OU10 443 underground tank removal action has been delayed due to lack of funding to complete the predecisional sampling and analysis plan (SAP), which will provide the necessary data to make a final determination of the viability of this project. If levels of RCRA listed wastes are too great in the subsurface to manage effectively under the current funding climate, the project will be scrapped. Unless additional funding can be secured, the SAP will not be completed in FY95. This IHSS (129) has been selected as part of the Kaiser-Hill "top ten" clean-up areas at the Site.

## Technical Memoranda

### Project

### OU 10 - Other Outside Closures

TM #1  
TM Title  
TM Status

Draft Final Phase I Nonintrusive TM #1  
When preparation was concluded: 17 Jan 95  
Projected date of submittal to EPA/CDPHE: 17 Jan 95  
Actual date of submittal: 17 Jan 95  
Date comments were received from the EPA/CDPHE: To be determined

TM #1  
TM Title  
TM Status

Final Phase I Nonintrusive TM #1  
When preparation was concluded: To be determined  
Projected date of submittal to EPA/CDPHE: 06 Apr 95  
Actual date of submittal: To be determined  
Date comments were received from the EPA/CDPHE: To be determined

## Planned Work for July

- Unless the SWO is lifted, no new work is planned for July.



## **2.10 OU 10 - OTHER OUTSIDE CLOSURES**

OU 10 is composed of 15 IHSSs scattered throughout the Rocky Flats Environmental Technology Site. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the Rocky Flats Environmental Technology Site. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY 94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of the similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

### **Scope of Work**

#### **Changes This Period**

None

### **Technical Approach**

#### **Changes This Period**

The Stop Work Order (SWO) issued in March 1995 effectively stops the technical activities and any new field work activities in OU 10. The technical scope for OU 10 remains the same.

### **IAG Milestone Accomplishments**

Submit Draft Phase I RFI/RI Work Plan  
Submit Final Phase I RFI/RI Work Plan

27 Nov 91  
01 May 92

### **Future IAG Milestones Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	30 Jan 95	Stop Work Order	To be determined*
Submit Draft Phase I Proposed IM/IRA Decision Document	26 May 95	Stop Work Order	To be determined*
Submit Draft Phase II RFI/RI Work Plan	27 Jun 95	Stop Work Order	To be determined*
Submit Final Phase II RFI/RI Work Plan	21 Nov 95	Stop Work Order	To be determined*
Submit Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	Stop Work Order	To be determined*
Submit IM/IRA Responsiveness Summary	06 Mar 96	Stop Work Order	To be determined*
Submit Final Phase I IM/IRA Decision Document	04 Jun 96	Stop Work Order	To be determined*
Corrective Design/Remedial Design Work Plan	05 Jul 96	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.



**Planned Work for July**

- Work will continue on completing soil boring logs, records transmittal, and field demobilization. Work will continue on data summary reports as the analytical results come in.

**Problems**

The tolling agreement which addressed missed IAG milestones expired January 31, 1995. The Rocky Flats Clean Up Agreement has not been signed so these original milestones could be enforced once the SWO is lifted and additional fines and penalties could be incurred.

**Open Items**

Comments are due from the regulatory agencies on the Draft TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*. However, based on verbal comments from the regulatory agencies, rescoping of the document is needed. Rescoping will be resumed after the SWO has been lifted.



<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	Stop Work Order	To be determined*
Submit IM/IRA Responsiveness Summary	06 Mar 96	Stop Work Order	To be determined*
Submit Final Phase I IM/IRA Decision Document and Responsiveness Summary	07 May 96	Stop Work Order	To be determined*
Submit Corrective Design/Remedial Design Work Plan	07 Jun 96	Stop Work Order	To be determined*

\* To be determined pending IA reconfiguration.

#### **June Work Activity Status**

Under the terms of the SWO issued in March 1995, work on sampling and analysis continues, but data evaluation and development of recommendations are not being performed.

The Draft Final TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*, has been under review by the regulatory agencies since November 1994. DOE received a plan for rescoping the OU 9 TM #1, *Field Sampling Plan - Volume II, Part A, Outside Pipelines*, in February 1995. Further work on rescoping the pipeline investigation has been suspended because of the SWO.

All field work has been completed for the tank investigation except for the HPGe Survey and remaining sodium iodide survey which have been stopped until the SWO is lifted.

Comments from the regulatory agencies on the addendum to OU 9 TM #1, *Volume I, Part A, Field Sampling Plan- Outside Tanks*, to address Tanks T-8, T-9, T-11, T-24, T-30, and T-32 have not been received. However, the addendum has been finalized, and field work has been completed on these tanks.

#### **Technical Memoranda**

##### Project

##### OU 9 - Original Process Waste Lines

TM #1

TM Title

Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks

TM Status

When preparation was concluded: Jan 94  
Projected date of submittal to EPA/CDPHE: Mar 94  
Actual date of submittal: 15 Mar 94  
Date EPA/CDPHE comments received: 11 Apr 94

TM #1

TM Title

TM Status

Field Sampling Plan - Volume II, Part A, Outside Pipelines  
When preparation was concluded: Aug 94  
Projected date of submittal to EPA/CDPHE: Nov 94  
Actual date of submittal: Nov 94  
Date EPA/CDPHE comments received: To be determined



## 2.9 / OU 9 - ORIGINAL PROCESS WASTE LINES

This project involves the investigation and remediation of a series of tanks and associated process waste lines. The original process waste lines consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe sections, 40 single and multiple storage tank sites, and three other areas of suspected process waste leakage is included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced between 1975 and 1984 by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred near pipe joints and valves, at approximately 100- to 200-foot intervals along the pipelines and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of the work has resulted in improved oversight, coordination, and reduced costs.

### Scope of Work

Changes This Period                      None

### Technical Approach

Changes This Period                      The Stop Work Order (SWO) issued in March 1995 effectively stops the technical activities and any new field work activities in OU 9. The technical scope for OU 9 remains the same.

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 91

### Future IAG Milestones Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94	Stop Work Order	To be determined*
Submit Final Phase I RFI/RI Report	06 Sep 94	Stop Work Order	To be determined*
Submit Draft Phase II RFI/RI Work Plan	10 Mar 95	Stop Work Order	To be determined*
Submit Draft Phase I Proposed IM/IRA Decision Document	01 May 95	Stop Work Order	To be determined*
Submit Final Phase II RFI/RI Work Plan	07 Aug 95	Stop Work Order	To be determined*



**Problems**

If the IA SWO is not resolved, there is a potential to significantly disrupt the flow of work and the progress of the project. If field crews are lost to other projects while the SWO is in effect, much greater than day-for-day schedule and cost impacts are possible.

**Open Items**

None



Data analysis and preparation of the Stage 2 Nonintrusive Field Investigation Data Summary Report is ongoing. This effort is focusing on documenting the field activities and the results of the NaI surveys, High Purity Germanium surveys, and soil gas analyses. Results of laboratory analyses will be incorporated as they become available. Approximately 80 percent of the results from the laboratory analyses has been received. The most significantly delayed analyses have been the lab HPGe analyses of the vertical soil profile samples. All of these samples have been run once, but several samples need to be re-run. This work is being delayed by the need for the lab to acquire new standards before reanalyzing the samples. Latest estimates indicate that the necessary calibration standard will not be available until mid to late July 1995. Sections of the Summary Report are being compiled as the data become available. In accordance with the Stop Work Order, data evaluation and development of recommendations are not being performed.

#### **IA IM/IRA Plan**

The needs analysis and programming scenario development were completed for the Decision Support System (DSS). Scenario development has occurred for all media.

Groundwater well installation began June 15, 1995.

#### **Technical Memoranda**

##### **Project**

##### **OU 8 - 700 Area**

##### **TM #1**

##### **TM Title**

Investigation of Foundation Drains and Other Data Compilation  
Addendum to the OU 8 Work Plan, Draft Final

##### **TM Status**

Projected date of submittal to EPA/CDPHE: 01 Dec 94

Actual date of submittal: 23 Nov 94

Date when EPA/CDPHE comments received: To be determined

##### **TM #2**

##### **TM Title**

Results of Nonintrusive Field Investigations and Intrusive Work Plans  
(Actual Title has not been finalized)

##### **TM Status**

Projected date of submittal to EPA/CDPHE: To be determined

Actual date of submittal: To be determined

Date when EPA/CDPHE comments received: To be determined

#### **Planned Work for July**

- Once the SWO is lifted, complete TM #1.
- Preparation of a Data Summary Report will continue without data interpretation or analysis.
- Once the SWO is lifted, resume work on TM #2.



## **2.8    OU 8 - 700 AREA**

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Environmental Technology Site. Contamination sources within the various IHSSs include above-ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affect areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and, in some cases, through precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs and ranges from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). The combination of this work has resulted in improved oversight, coordination, and reduced costs.

### **Scope of Work**

#### **Changes This Period**

None

### **Technical Approach**

#### **Changes This Period**

The Stop Work Order (SWO) issued in March 1995 effectively stops the technical activities and any new field work activities in OU 8. The technical scope for OU 8 remains the same.

Accelerated removal of the sodium hydroxide tank and two steam condensate tanks which are located within IHSS 139.1 (N) was halted due to the May 1995 budget recision. These removals were being performed as part of the D&D Pilot Project #4. Funding to this project was eliminated as part of the budget recision.

### **IAG Milestone Accomplishments**

Submit Draft Phase I RFI/RI Work Plan  
Submit Final Phase I RFI/RI Work Plan

01 May 92  
01 Dec 92

### **Future IAG Milestones Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94	Stop Work Order	To be determined
Submit Final Phase I RFI/RI Report	12 Jul 94	Stop Work Order	To be determined

### **June Work Activity Status**

On June 1, 1995 informal verbal comments on the redlined pages of TM#1 were received from CDPHE. There were only two comments and they were minor in nature. These were communicated verbally to the subcontractor on June 2, 1995. A letter from CDPHE was received encouraging DOE to finalize TM#1. Upon approval from DOE, a final document will be developed.



## **Technical Memoranda**

### **Project**

### **Integrated Industrial Area Operable Units**

TM #1

TM Title

TM Status

IA Surface Water and Sediment Sampling Plan

Projected date of submittal to EPA/CDPHE: 12 Jan 95

Actual date of submittal: 05 Jan 95

Date CDPHE comments were received: 15 Jan 95

Date CDPHE approval was received: 05 Mar 95

### **Planned Work for July**

- Due to the Stop Work Order issued in March 1995, activities for the IA OUs will be brought to a logical closure point as per the Implementation Plan, submitted in May 1995.
- Transition to the new DOE subcontractor and reorganization of the Environmental Restoration Program Division will be completed.

### **Problems**

The Stop Work Order issued in March 1995, will delay intrusive field activities planned for fourth quarter FY95 and all subsequent activities.

### **Open Items**

- Comments on the Proposed Plan for Reconfiguration of the IA OUs.
- New agreement with the regulatory agencies needs to be negotiated to establish new milestone dates for the Industrial Area Operable Units.



## **2.IA INDUSTRIAL AREA (IA) OPERABLE UNITS (8, 9, 10, 12, 13, and 14)**

The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of a close proximity to each other and similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

### **Scope of Work**

#### **Changes This Period**

None

### **Technical Approach**

#### **Changes This Period**

The Stop Work Order issued in March 1995 effectively stops the technical activities and any new field work activities in the IA OUs. The technical scope for the IA OUs remains the same.

### **IAG Milestone**

#### **Accomplishments**

Submitted Proposed Plan for Reconfiguration  
of the IA OUs

04 Nov 94

#### **Future IAG Milestones**

##### **Through FY 95**

This information is listed in the IA OUs.

### **June Work Activity Status**

DOE issued a formal Stop Work Order on March 7, 1995. An Implementation Plan is being developed and was delivered to DOE in May 1995. The plan outlines a course of action to bring the Industrial Area Operable Units activities to a logical closure point. All activities relating to the completion of the IAG milestones have been included in the Stop Work Order. Field activities and "time dependent" (seasonal) sampling activities have been exempt from the Stop Work Order, however, the technical memoranda to summarize the activities are not exempted.

The Proposed Plan for Reconfiguration of the IA OUs was submitted to the regulatory agencies November 4, 1994. To date, no written comments have been received on the Proposed Plan.

Due to recent budget recisions the funding for the third sampling event under the Surface Water and Sediment Field Sampling Plan may not be performed.

### **IA OUs Quality Assurance**

No significant activity due to the Stop Work Order.

### **IA IM/IRA Plan**

No significant activity to report.



## 7 OU 7 - PRESENT LANDFILL

J 7, the Present Landfill, is located north of the site complex on the western edge of an unnamed tributary of North Walnut Creek and comprises four IHSSs. IHSS 114 includes landfill waste and leachate at the Present landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area, which is a section of the Present Landfill located at the southwest corner, used between 1986 and 1987 as a temporary storage area for hazardous waste. In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively. The practice of spray evaporation was discontinued in 1993.

and  
15,

The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of the Rocky Flats Environmental Technology Site nonradioactive and nonhazardous wastes. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

### **Scope of Work Changes This Period**

The technical approach to implementation of the leachate collection and treatment system was modified to be more compatible with the final remedy under consideration.

### **Technical Approach Changes This Period**

Proposed to Regulatory Agencies to modify the Proposed Action Memorandum to be compatible with the final remedy.

### **IAG Milestone Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	28 Aug 91
Submit Draft Phase I RFI/RI Report	Deleted *
Submit Draft Phase II RFI/RI Work Plan	Deleted *
Submit Final Phase I RFI/RI Report	Deleted *
Submit Final Phase II RFI/RI Work Plan	Deleted *
Submit Preliminary Draft Proposed Action Memorandum (leachate) to CDPHE/EPA <sup>1</sup>	13 Oct 94
Submit Draft Revised Phase I Work Plan Technical Memorandum <sup>2</sup>	23 May 94
Submit Final Phase I Work Plan Technical Memorandum <sup>2</sup>	08 Sep 94
Submit Final Draft Proposed Action Memorandum (leachate) for Public Comment <sup>3</sup>	13 Oct 94
Submit Final Responsiveness Summary and Proposed Action Memorandum to CDPHE/EPA <sup>4</sup>	30 Nov 94

\* CDPHE deleted per Oct 21, 1994, letter.

<sup>1</sup> CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Preliminary Draft IM/IRA to CDPHE/EPA"

<sup>2</sup> New milestones per CDPHE October 21, 1994, letter.

<sup>3</sup> CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Final Draft IM/IRA for Public Comment"

<sup>4</sup> CDPHE added this milestone per May 11, 1994, letter. Technically fulfilled "Submit Final Responsiveness Summary IM/IRA to CDPHE/EPA"



**Future IAG Milestones  
Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
<u>Landfill Closure IM/IRA</u>			
Submit Draft Phase I Proposed IM/IRA Decision Document	01 Nov 94	31 Aug 95	31 Aug 95
Submit Final Phase I Proposed IM/IRA Decision Document	05 Jan 96		03 Jul 95
Submit IM/IRA Responsiveness Summary	14 Aug 96	01 Apr 96	01 Apr 96

Landfill Leachate Collection Proposed  
Action Memorandum

Release Final Responsiveness Summary and Proposed Action Memorandum	22 Mar 95		22 Mar 95
Submit Modified Proposed Action Memorandum	15 Jun 95		15 Jun 95
Begin Seep Collection	16 Aug 95		16 Aug 95

**June Work Activity Status**

Soils data was transferred to the Air Quality Division for evaluation to determine if a fugitive dust permit is required for the Passive Leachate Collection and Treatment System construction.

The Readiness Review for the Passive Leachate Collection and Treatment System Construction was reactivated.

The first review of the Waste Stream and Residue Identification and Characterization book for OU 7 waste was completed.

The Landfill IM/IRA Decision Document was reviewed by DOE and Environmental Restoration Program. Corrective Action Decision/Record Of Decision, Proposed Plan and RCRA permit language will also be included in the Interim Measure/Interim Remedial Action Decision Document.

The draft design, technical specifications, and construction quality assurance plan for the proposed slurry wall were completed. The slurry wall was initially planned as an accelerated action but instead will likely be constructed as a maintenance action in Calendar Year 1996.

The subcontract for engineering design of a passive collection and treatment system at the Present Landfill Seep was negotiated. The Statement of work was modified, proposal received, technical evaluation performed and contract award was made June 26, 1995.



TM #3  
TM Title  
TM Status

Modeling Description  
When preparation of Draft was concluded: 10 Nov 93  
Date the Draft TM was submitted to EPA/CDPHE: 10 Nov 93  
Date EPA/CDPHE comments were received: 23 Dec 93  
Date the Final TM was submitted to EPA/CDPHE: 14 Jan 94  
Actual date of submittal of the Second Final TM to EPA/CDPHE:  
30 Jan 95

TM #4  
TM Title  
TM Status

Contaminants of Concern  
Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94  
Date EPA/CDPHE comments were received: 03 Oct 94  
Approved on 28 Dec 94

TM #5  
TM Title  
TM Status

Toxicity Factors  
Date the Draft Final TM was submitted to EPA/CDPHE: 23 Aug 94  
Deleted from submittal by a letter dated 28 Dec 94

**Planned Work for July**

- Complete several chapters of the draft RFI/RI Report for delivery to the regulatory agencies

**Problems**

None

**Open Items**

Approvals of TM #3, *Modeling Description*, and TM #2, *Exposure Assessment*, are pending from the regulatory agencies.

Comments from the regulatory agencies on the Draft Final Ecological Risk Assessment Methodology Site Conceptual Model are pending.



## 2.6 OU 6 - WALNUT CREEK

OU 6, the Walnut Creek Priority Drainage, comprises assessment and remediation of 19 IHSSs: the A-series Detention Ponds, Ponds A-1 through A-4 (IHSSs 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B, and C (IHSSs 166.1, 166.2, and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater.

### Scope of Work

#### Changes This Period

None

### Technical Approach

#### Changes This Period

None

### IAG Milestone

#### Accomplishments

Submit Draft Phase I RFI/RI Work Plan

19 Apr 91

Submit Final Phase I RFI/RI Work Plan

16 Sep 91

### Future IAG Milestones

#### Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	04 Aug 93	02 Oct 95	19 Apr 95
Submit Final Phase I RFI/RI Report	07 Jan 94	21 Feb 96	20 Nov 95

### June Work Activity Status

OU6 is waiting for approval from the regulatory agencies on TM #2, *Exposure Assessment*, and TM #3, *Model Descriptions*. OU6 is also waiting for regulatory agency comments on the Draft Final ERAM Site Conceptual Model and the Draft Final Ecological Chemical of Concern Methodology. EPA has stated that they will approve each of these documents. Work is continuing without approval.

Writing of a section of the Human Health Risk Assessment that includes the data from the PCB sampling project continued.

EPA verbally proposed the idea of eliminating the Problem Formulation TM and replacing it with a presentation to the regional Biological Technical Assessment Group (BTAG) working group. This will certainly help us complete the Environmental Risk Assessment (ERA) within the scheduled time, but adds some risk to the technical aspects of the work. The regional BTAG working group will not likely meet until mid-July 1995. By this time, the subcontractor will be well into the problem analysis and risk characterization stage. If any major concerns arise from the presentation to the BTAG, the schedule will probably slip.



A preliminary draft of Chapter 8, Summary and Conclusions was completed. This does not include the conclusions from the ecological risk assessment. This will be added in August 1995, or September 1995, when the ERA is complete.

The Exposure Assessment TM 2 was revised to incorporate the open space scenario. This will allow the EPA to approve it.

In order to determine the ecological risk drivers requiring an in-depth risk assessment, a follow-up meeting to the May 31, 1995, meeting was held on June 5, 1995. This narrowed the scope for the problem formulation considerably.

A meeting was held with EPA and CDPHE on June 7, 1995, to present the preliminary results of the baseline risk assessment. Three primary conclusions were made. A working group from the appropriate stakeholders will be organized by the EPA and the DOE to determine future pond use and pond water management. Also, draft sections of the RFI/RI report will be provided to the regulatory agencies before the IAG milestone date. Lastly, the Feasibility Study will no longer be necessary for closure of OU 6.

Work on the Feasibility Study due to the preliminary results of the Baseline Risk Assessment was discontinued.

The first draft of the OU6 Human Health Risk Assessment (HHRA) was reviewed and comments submitted to Woodward-Clyde Federal Services (WCFS). Preliminary results of the HHRA for OU6 were presented to the agencies.

#### Sprinkler Pipe Cleanup and B-3 Pond Cleanup

Removal of the Sprinkler Pipe is approximately 90 percent complete.

### **Technical Memoranda**

#### Project

#### OU 6 - Walnut Creek

##### TM #1

##### TM Title

##### TM Status

##### Work Plan Modifications

Approved by EPA: 08 Jan 93

##### TM #2

##### TM Title

##### TM Status

##### Exposure Assessment

When preparation of the Draft TM was concluded: 07 Jul 93

Date the Draft TM was submitted to EPA/CDPHE: 07 Jul 93

Actual date of submittal of the Final TM to EPA/CDPHE: 14 Feb 95



TM #3	Soil Sampling at IHSS 115
TM Title	When preparation was concluded: 07 May 93
TM Status	Actual date of submittal: 26 Jan 93
 TM #4	
TM Title	Soil Sampling at IHSS 133
TM Status	When preparation was concluded: 07 Jun 93
	Actual date of submittal: 12 Apr 93
 TM #5	
TM Title	Soil Gas Sampling at IHSS 115
TM Status	When preparation was concluded: 07 May 93
	Actual date of submittal: 25 Mar 93
 TM #6	
TM Title	Cone Penetrometer at IHSS 115
TM Status	When preparation was concluded: 14 Apr 93
	Actual date of submittal: 25 Mar 93
 TM #7	
TM Title	Soil Borings at IHSS 133
TM Status	When preparation was concluded: 07 May 93
	Actual date of submittal: 19 Feb 93
 TM #8	
TM Title	Monitoring Wells at IHSS 115
TM Status	TM #8 has been canceled and has been replaced by a letter outlining the justification for the location of the wells in IHSS 115.
 TM #9	
TM Title	Monitoring Wells at IHSS 133, Ash Pits, Incinerator, and Concrete Wash Pad
TM Status	Actual date of the Draft TM submittal to EPA/CDPHE: 06 May 93
	Actual date of the Final TM submittal to EPA/CDPHE: 28 Jun 93
 TM #10	
TM Title	Soil Borings at IHSS 209
TM Status	When preparation was concluded: 06 Mar 93
	Actual date of the Final TM submittal to EPA/CDPHE: 06 Mar 93
 TM #11	
TM Title	Contaminants of Concern
TM Status	Actual date of the Final TM submitted to EPA/CDPHE: 20 Mar 95
	EPA approval pending
 TM #12	
TM Title	Exposure Scenarios
TM Status	Actual date of the submittal of the Final TM to EPA/CDPHE:
	12 May 95
	EPA approval pending



TM #13  
TM Title  
TM Status

Modeling  
Actual date of submittal of the Final to EPA/CDPHE: 29 Nov 94

TM #14  
TM Title  
TM Status

Toxicity Assessment  
Actual date of submittal of the Final to EPA/CDPHE: 14 Nov 94  
EPA approval pending

TM #15  
TM Title  
TM Status

Addendum to the Field Sampling Plan  
Actual date of the Final TM submittal to EPA/CDPHE: 31 Aug 94

**Planned Work for July**

- Completion of the Baseline Risk Assessment
- Continued preparation of the RFI/RI

**Problems**

None

**Open Items**

Approval of Technical Memorandum #14, *Toxicity Assessment*, is pending.

Approval of Technical Memorandum #11, *Chemicals of Concern*, is pending.



## 2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, comprises the assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSSs 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSSs 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified: one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been assigned to this OU. Possible contamination in this OU was caused by landfill operations, storm water runoff into holding ponds, and Ash Pit operations. Constituents in OU 5 include depleted uranium, metals, solvents, pesticides, polychlorinated biphenyl, and Volatile Organic Compounds. Media affected include soils, sediments, surface water, groundwater, and air.

### Scope of Work

**Changes This Period** None

### Technical Approach

**Changes This Period** None

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Submit Final Phase I RFI/RI Work Plan	30 Aug 91

### Future IAG Milestones Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93	01 Nov 95	11 May 95
Submit Final Phase I RFI/RI Report	03 May 94	02 Apr 96	14 Nov 95

### June Work Activity Status

Although, plutonium was not determined to be a chemical of concern within OU5, the risk calculations were completed in response to EPA's request. The calculations were performed for plutonium-239/240 in surface soils within areas of concern 1 and 2 which include the original landfill and the ash pits. The resulting risks by area of concern and receptor for ingestion of surface soil and external radiation exposure range from  $10^{-14}$  to  $10^{-9}$ .

The final phases of Technical Memorandum #15, *Addendum to the Field Sampling Plan*, (TM15) include finalization of LogIt Logs and monthly water level measurements. Third and fourth quarter groundwater sampling have been deleted from this FY due to the budget recision.

The Human Health Risk Assessment calculations have been completed and are undergoing a quality check. Preparation of the HHRA section of the draft Phase I RFI/RI Report continues.

EPA and CDPHE continued to review Technical Memorandum #3, *Soil Sampling at IHSS 115* (TM3), of the Ecological Risk Assessment Methodology. Comments were due in mid-May. EPA proposed a presentation to the regional Biological Technical Assessment Group (BTAG) working group. This will certainly help us complete the



Environmental Risk Assessment (ERA) within the scheduled time. The regional BTAG working group will not likely meet until mid-July 1995. If any major concerns arise from the presentation to the BTAG, the schedule will probably slip.

Preparation of sections of the draft Phase I RFI/RI Report continues. Chapter 2.0, *Field Operations and Investigations*, and Chapter 3.0, *Physical Characteristics*, are being updated to incorporate the results of the TM #15, *Addendum to the Field Investigations*. Section 3.0 is also being revised to incorporate information contained in the geologic characterization and the geochemical characterization reports recently submitted. The presentation of the TM #15 scope of work completed and a summary of preliminary investigative results given.

The current budget for the OU5 Major Activity Document-CAE is currently overrun due to the budget recision for financial commitments, the labor rate change, and an increases in analytical costs. The remaining portions of the CMS/FS (Identification of Alternatives and the Geotechnical Analysis) have been postponed until funding becomes available.

The draft Remedial Alternative List (Task 7) was completed. The alternatives were presented using logic diagram scenarios. It should be noted that this unique format is a concise way of presenting the feasible alternatives for OU5 without the benefit of the results of the Baseline Risk Assessment.

Field observations of the Old Landfill (IHSS 115) made on June 15, 1995, indicated the presence of a landslide slump feature on the west end. No landslide activity has previously been documented from this area, west of IHSS 196. The landslide slump appears to be limited to a thin 6 to 8 inch headscarp observed just below the break in the top of the slope. The landslide slump appears to be a result of consolidation of loose fill material due to the recent period of high rainfall and resultant increase in soil moisture. Photographs and mapping of the headscarp were completed on June 19, 1995.

Work continues on the Feasibility Study Detailed Analysis of Alternatives.

## Technical Memoranda

### Project

### OU 5 - Woman Creek Priority Drainage Remedial Investigation

#### TM #1

#### TM Title

#### TM Status

#### Surface Water and Sediments

When preparation was concluded: 30 Nov 92

Projected date of submittal to EPA/CDPHE: 30 Nov 92

Actual date of submittal: 13 Oct 92

#### TM #2

#### TM Title

#### TM Status

#### Surface Geophysics

When preparation was concluded: 30 Nov 92

Actual date of submittal: 13 Oct 92



IM/IRA Draft Responsiveness Summary. The request has been forwarded to the regulators.

**Preconstruction** - The staging of equipment from between the 207A and 207B series ponds to the south end of the ponds is continuing. There is still one pump located on the 207B center berm which needs to go through the lockout/tagout procedure before it can be disconnected and moved to the staging area. There are three contaminated pumps located on the 207B north berm which still need to be relocated. These pumps are awaiting a determination of an appropriate staging area. All conduit on the west side of the B series ponds has been removed. All jersey barriers and cables around the 207A and 207B series ponds have been relocated to the concrete laydown pad. The Radiation Control Technicians are completing the Property Release Evaluations (PRE) for this equipment. The subcontractor will move the equipment to the landfill once the PREs are completed.

The final three cargo containers have been relocated from behind Building 964 to areas at Building 892, Building 664, and to the site at Tenth & Patrol Road. The subcontractor ordered the crushed gravel to be placed around the containers at Tenth and Patrol Road. The two containers near Building 788 will also be moved when weather permits and support is available from Trucking.

The 90% Title II design for the engineered barrier is progressing on schedule. Internal reviews are continuing. The final design will be submitted on June 14, 1995. Some concern has been raised as to the viability of the use of 'paving quality' asphalt concrete as the primary (and only) hydraulic barrier for the prevention of infiltration of precipitation into the contaminated media. Specifically in question is the proposed service life of 1000 years. Literature reviews and contacts with asphalt 'experts' are continuing to determine the best (most durable) asphalt mix for this application.

**Interim Measure Sludge -**

Activities to remove sludge from the clarifier to sludge holding tanks have been deferred due to budget reductions. The transfer of 207C Pond material from the metal crates is proceeding. Problems have been encountered in filling the tanks with the material from the metal containers because of debris (mostly tar paper) plugging the inlet piping. Changes to the tank inlets were successful and off loading has become much more reliable. In addition, a new vacuum pump has been ordered to improve the efficiency of the sludge transfer from the metals to the sludge holding tanks. Twelve additional tanks were ordered and received. Eight of these tanks have been installed in Tent 6, and four have been certified for use. The remaining tank certifications are in progress.



### **Planned Work for July**

- The transfer of salt in metal containers to sludge holding tanks will continue.
- The site stripout activity will continue.
- The 904 repack will continue.
- Shutdown of most other project elements will be completed.

### **Problems**

The OU 4 engineered barrier issues that initiated a dispute resolution in July 1994 continue. Although the dispute formally ended on July 27, 1994, full regulatory support was not achieved. Both the EPA and the DOE support the plan that calls for the placement of minimally treated sludge and pondcrete under the engineered barrier in lieu of offsite disposal. CDPHE, however, supports only the placement of treated pondsludge under the cap and has rejected plans that included pondcrete. EPA support if pondcrete is excluded may not be maintained. Impacts of this decision, coupled with DOE-imposed budget reductions and reassessment of path forward, will cause future IAG Table 6 milestones to be missed. These changes will cause significant increase in OU4 life-cycle costs.

### **Open Items**

A key OU 4 assumption is the use of the Corrective Action Management Unit/Temporary Unit for treating certain remediation wastes during Phase I Remediation. Based upon direction from CDPHE during the Joint Working Sessions, DOE plans to use the Corrective Action Management Unit and Subpart X regulations to promote significant cost savings and schedule acceleration while fully protecting human health and the environment. However, the CDPHE has not communicated whether additional requirements will be imposed.

Tent 12 and the pad area south on the 750 Pad (for pondcrete) and Tent 11 on the 904 Pad (pondcrete) are required to treat the sludge and pondcrete. These areas need to be made available by either moving wastes to another location or preferably by shipping all saltcrete that complies with the Land Disposal Restrictions (LDR) to an offsite location. Neither option is currently funded, although partial funding for saltcrete disposal does exist. A substantial increase in the funding for saltcrete disposal is needed to execute this option.



<b>TM #2</b> <b>TM Title</b> <b>TM Status</b>	<b>Modification to Field Activities</b> Draft submitted to EPA/CDPHE: 18 Mar 93 Comments received: 07 May 93 Projected submittal of Final TM to EPA/CDPHE: 07 Jun 93 Actual submittal date of Final TM: 09 Jun 93 EPA/CDPHE final approval of TM #2: 30 Jun 93
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<b>TM #3</b> <b>TM Title</b> <b>TM Status</b>	<b>Environmental Evaluation</b> Draft submitted to EPA/CDPHE: 19 Mar 93 Comments received: EPA 21 Apr 93, CDPHE 02 Jun 93 Projected submittal of Final TM to EPA/CDPHE: 30 Apr 93 Actual submittal date of Final TM: 02 Jul 93 EPA/CDPHE final approval of TM #3: 30 Jul 93
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<b>TM #4</b> <b>TM Title</b> <b>TM Status</b>	<b>Human Health Risk Assessment Exposure Scenarios</b> Draft submitted to EPA/CDPHE: 19 Mar 93 Comments received: EPA 21 Apr 93, CDPHE 23 Apr 93 Projected submittal of Final TM to EPA/CDPHE: 11 Jun 93 Actual submittal date of Final TM: 11 Jun 93 EPA/CDPHE final approval of TM #4: 25 Jun 93
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<b>Planned Work for July</b>	<ul style="list-style-type: none"> <li>The field activities for the Phase II RFI/RI Program are scheduled to continue.</li> </ul>
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<b>Problems</b>	None
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<b>Open Items</b>	None
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#### **2.4.2 OU 4 REMEDIATION**

<b>Scope of Work</b> <b>Changes This Period</b>	Scope reductions due to reevaluation of path forward in lieu of changed conditions and budgetary restraints. Future path under reevaluation by DOE, CDPHE, and EPA.
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<b>Technical Approach</b> <b>Changes This Period</b>	The current baseline will not be met due to reevaluation of path forward and budgetary restraints.
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<b>IAG Milestone</b> <b>Accomplishments</b>	<table border="0"> <tr> <td>Draft Phase I Proposed IM/IRA Decision Document</td> <td>27 May 94</td> </tr> <tr> <td>All Solar Ponds Emptied of Water and Sludge</td> <td>15 Jan 95</td> </tr> <tr> <td>Final Phase I Proposed IM/IRA Decision Document</td> <td>01 Feb 95</td> </tr> </table>	Draft Phase I Proposed IM/IRA Decision Document	27 May 94	All Solar Ponds Emptied of Water and Sludge	15 Jan 95	Final Phase I Proposed IM/IRA Decision Document	01 Feb 95
Draft Phase I Proposed IM/IRA Decision Document	27 May 94						
All Solar Ponds Emptied of Water and Sludge	15 Jan 95						
Final Phase I Proposed IM/IRA Decision Document	01 Feb 95						



**Future IAG Milestones  
Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit IM/IRA Responsiveness Summary	25 Jan 95	09 Jun 95	On schedule
Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	24 Apr 95	9 Aug 95*	
Submit IM Title II Design Work Plan	24 Jun 96	18 Dec 95*	
Start of Soil Excavation Relative to IHSS 101 Closure	28 Jan 97	28 Oct 96*	

\* Milestone will be missed due to reevaluation of path forward and funding restraints, forecast date is not known.

**June Work Activity Status**

**Waste Treatment**

In May, the scheduled status meeting at RFETS was canceled due to budgetary restrictions. On May 24, 1995 a stop work order was sent to Procurement. The Inventory Pondcrete Conceptual Design Report, and the OU4 Consolidated Waste Treatability Study were placed on-hold. Contract closeout or reauthorization decisions are on hold pending resolution of scope and budget issues.

**Waste Storage and Disposal**

As of June 26, 1995, over 3,500 metal containers were repacked and stacked. Recent communication with the CDPHE established that for the waste being stored and the way the waste is being stored, the asphalt pad provides a "sufficiently" impervious surface to meet Part B Permit requirements. This will reduce required upgrades to meet the Part B Permit requirements. Enhanced run-off/run-on control will be required.

**Interim Remedial Action**

**Water Management** - The modular tanks have a remaining usable volume of about 169,000 gallons. June 1995 was a very wet month and over a million gallons of water flowed into the modular tanks. During high flows in May, water was placed in the third tank, which is normally kept empty for emergency response. The RCRA inspections and compressor rotations in Building 910 were satisfactorily completed. Also, the RCRA inspections of the Modular Storage Tanks were completed.

**Interim Measure Remediation**

**IM/IRA Decision Document** - The IM/IRA Draft Responsiveness Summary IAG milestone was delivered to regulators on June 9, 1995.

Budgetary constraints and potential technical scope changes during the month have essentially stopped work in some areas, while only minimal support remains in others. These events have necessitated an extension request for all IAG Table 6 milestones after the Phase I



## **2.4 OU 4 - SOLAR EVAPORATION PONDS**

OU 4 comprises five solar evaporation ponds: 207A, 207B series (North, Center, South), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

The ponds were relined with various upgraded materials through the early 1960s and 1970s; however, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger Interceptor Trench System (ITS).

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) Disposition of noncertified pondcrete, saltcrete, and pond sludge as required by the Federal Facilities Compliance Act; (2) water management/treatment by means of the IM/IRA Decision Document signed by the regulatory agencies and DOE; (3) the OU 4 assessment and remedial action in accordance with the IAG, which superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the Site's RCRA interim status and permit requirements for storage of pond wastes. The water and pond sludge management is a necessary precursor to the OU 4 assessment and remediation, while the pad operations are considered necessary support activities.

Work in the four technical areas was planned to close the ponds and remediate OU 4. The scope of the work was to (1) remove water and sludge from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related groundwater, (3) store pond wastes in compliance of all regulations such as RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCRA closure of the impoundments, (6) remediate the ponds (source and soils) as required, and (7) remediate groundwater as required.

The RCRA/CERCLA investigation Phase I field work began in FY 93 and will continue through construction of the final corrective/remedial action. The technical scope to be performed by means of the IAG is funded through the OU 4 Assessment and Remediation Area with other areas funded to provide necessary precursor and support activities to allow the IAG scope to be completed.

In July, 1993 the IM/IRA to treat ITS water was completed and the system continues operation today. The ITS water is treated in the Building 374 treatment facility. Process water has not been pumped into the ponds since 1986, and with the diversion of the ITS water to storage tanks in April 1993, groundwater is no longer returned to the ponds. Pond sludge removal operations in four of the five solar evaporation ponds was completed by August 1994. Operations to remove the sludge in Pond 207C was completed in January 1995.

In April 1995, an IM/IRA/Environmental Assessment Decision Document that proposed the Phase I pond closure and remedy completed public comment. The proposal recommended the use of newly promulgated RCRA regulations designed to improve corrective actions. Contaminated soil, pond sludge, pondcrete, and debris will be permanently placed into the pond closure and isolated to protect human health and the environment. The DOE, CDPHE, and EPA are evaluating the proposal. DOE has requested an extension of all OU4 IAG milestones to allow time for the agencies' evaluation and in response to FY95 funding recisions.



#### **2.4.1 OU 4 ASSESSMENT**

##### **Scope of Work Changes This Period**

Scope reductions due to reevaluation of path forward in lieu of changed conditions and budgetary restraints. Future path under reevaluation by DOE, CDPHE, and EPA.

##### **Technical Approach Changes This Period**

The current baseline will not be met due to reevaluation of path forward and budgetary restraints.

##### **IAG Milestone Accomplishments**

Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Submit Final Phase I RFI/RI Work Plan	26 Nov 90
Submit Draft Phase II RFI/RI Work Plan	27 May 94
Submit Final Phase II RFI/RI Work Plan	02 Sep 94

##### **Future IAG Milestones Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase II RFI/RI Report	16 Apr 96		16 Apr 96 *
Submit Final Phase II RFI/RI Report	11 Sep 96		11 Sep 96 *

\* Milestone will be missed due to reevaluation of path forward and funding restraints, forecast date is not known.

##### **June Work Activity Status**

The Phase I sampling in Pond 207C was replanned to be performed by the Phase II subcontractor to realize cost savings. Due to heavy precipitation, Pond 207C contains a fair amount of water which will delay sampling.

On March 23, 1995, the Seismic Refraction Survey was completed. On March 15, 1995, the geoprobe work began and was completed in early May. Demobilization was completed by May 15, 1995.

##### **Technical Memoranda**

###### **Project**

###### **OU 4 - Solar Evaporation Ponds**

TM #1  
TM Title  
TM Status

Vadose Zone Investigation  
Draft submitted to EPA/CDPHE: 16 Nov 92  
Comments received: 30 Nov 92  
Conditional approval: 30 Nov 92  
Projected submittal of Final TM to EPA/CDPHE: 15 Dec 92  
Actual submittal date of Final TM: 15 Dec 92  
Submittal of TM #1 Vadose Zone Schedule: 19 May 93  
EPA/CDPHE final approval of TM #1: 17 Jun 93



TM #3  
TM Title  
TM Status

Modeling  
When preparation was concluded: Jan 95  
Projected date of submittal to EPA/CDPHE: 02 Mar 95  
Actual date of submittal: 30 Mar 95  
Date comments were received: 21 Apr 95

TM #4  
TM Title  
TM Status

Contaminants of Concern  
When preparation was concluded: Aug 94  
Projected date of submittal to EPA/CDPHE: 20 Sep 94  
Actual date of submittal: 26 Sep 94  
Date comments were received: 09 Jan 95

TM #5  
TM Title  
TM Status

Toxicity  
When preparation was concluded: Sep 94  
Projected date of submittal to EPA/CDPHE: 10 Nov 94  
Actual date of submittal: 11 Oct 94  
Date comments were received: May 24, 1995

TM #6  
TM Title  
TM Status

Ecological Evaluation  
When preparation was concluded: In progress  
Projected date of submittal to EPA/CDPHE: 11 Jul 96  
Date comments were received: To be determined

#### **Planned Work for July**

- Development of the Draft RI Report will continue.
- The CDPHE Conservative Screen Letter Report will be approved.
- Work on the Proposed Plan will continue. Submittal of this document is expected in September 1995.
- Installation of remaining air monitoring station and meteorological monitoring station is expected to be completed in early July 1995.

#### **Problems**

None

#### **Open Items**

Approval of the CDPHE Conservative Screen Letter Report for OU 3



## 2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG-directed activities, according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), involve assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U. S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

### Scope of Work

**Changes This Period** None

### Technical Approach

**Changes This Period** None

### IAG Milestone Accomplishments

Submit Draft Past Remedy Report	26 Oct 90
Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
Submit Final Past Remedy Report	02 Apr 91
Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
Submit Final Phase I RFI/RI Work Plan	06 Dec 91

### Future IAG Milestones Through FY96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	30 Oct 95	15 Sep 95
Submit Final Phase I RFI/RI Report	13-Dec 93	11 Jul 96	11 Jul 96

### June Work Activity Status

Completed the draft Risk Analysis Report on June 23, 1995.

Completed the draft Ecological Evaluation Report on June 19, 1995.

Regulatory agency comments on Exposure Scenarios for the HHRA, Technical Memorandum (TM2) and Toxicity Assessment Technical Memorandum, (TM5) were received. TM5 comments were received six months late. The comments appear to be relatively minor. If significant effort is required for resolution, budget and schedule may be affected. The regulatory agencies have indicated that approval may be granted without formal resolution.



At regulatory agency request, additional information has been provided regarding the Modeling Technical Memorandum (TM3). A letter responding to the agencies questions has been developed. Modeling results were presented to RFFO in preparation of presenting results of the Wind Tunnel Study and Human Health Risk Assessment exposure modeling to the regulatory agencies.

Additional subsurface sediment information has been requested with regard to CDPHE Conservative Screen Letter Report. Resolution of this issue was reached through meetings with EPA, CDPHE, DOE, and EG&G. A response letter has been prepared to show spatial distribution of metals in subsurface sediments and has been submitted to the regulatory agencies.

Preliminary work on the Proposed Plan has begun. Submittal of this document is expected in September 1995.

The installation of the 100th Avenue Air Monitoring Station was completed and declared fully operational on June 26, 1995. Construction of the W. 88th Avenue Air Monitoring Station began on June 21, 1995.

The herbicide treatment application of the Remedial Acreage was accomplished on June 20, 1995.

## **Technical Memoranda**

### Project

TM #1 (RFI/RI)  
TM Title  
TM Status

TM #1 (CMS/FS)  
TM Title  
TM Status

TM #2  
TM Title  
TM Status

### OU 3 - Offsite Areas

Field Changes to RFI/RI the Work Plan  
When preparation was concluded: 10 May 93  
Projected date of submittal to EPA/CDPHE: 10 May 93  
Actual date of submittal: 23 Apr 93  
Date comments were received: 05 Jan 94

Preliminary Remediation Goals  
When preparation was concluded: In progress  
Projected date of submittal to EPA/CDPHE: 11 Jul 96  
Date comments were received: To be determined

Exposure Scenarios for the Human Health Risk Assessment  
When preparation was concluded: 12 May 93  
Projected date of submittal to EPA/CDPHE: 12 May 93  
Actual date of submittal: 03 May 93  
Date comments were received: 15 Jul 93



**Technical Approach  
Changes This Period**

The OU 2 Accelerated Action (T-3) budget has been completed. Work on the Alternative Analysis document was completed.

**IAG Milestone  
Accomplishments**

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	03 May 91
Submit Draft Treatability Test Report (Phase I Granular Activated Carbon)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I Granular Activated Carbon)	02 Jun 92
Submit Subsurface Site 1 Draft Test Plan	29 Oct 92
Submit Subsurface Site 1 Final Test Plan	12 Jan 93
Submit Draft Pilot Test Plan Site 2	24 Jun 93
Submit Draft Surface Water Field Treatability Report	13 Jul 93
Submit Final Phase II Treatability Study Report	26 Jan 94
Begin Subsurface IM/IRA Test I	14 Feb 94
Submit Subsurface Site 2 Draft Test Plan	06 Jul 94
Submit Draft Pilot Test Report Site 1	10 Nov 94
Submit Final Pilot Test Report Site 1	10 Nov 94
Start-up Soil Vapor Extraction Test Site 2	02 Mar 95*
Submit Draft Pilot Test Report Site 2	02 Mar 95*
Submit Final Pilot Test Report Site 2	02 Mar 95*
Submit Draft Pilot Test Plan Site 3	02 Mar 95*
Submit Final Pilot Test Plan Site 3	02 Mar 95*
Complete Pilot Unit 3 Installation	02 Mar 95*

**IAG Milestone  
Accomplishments**

Submit Draft Pilot Test Report Site 3	02 Mar 95*
Submit Final Pilot Test Report Site 3	02 Mar 95*
Submit Liquid Removal Draft Proposed Action Memorandum	03 Mar 95

- \* Because work scopes were modified, the Soil Vapor Extraction Test Sites 2 and 3 activities were canceled. New milestone dates to reflect new work scopes, which use new technologies, have been negotiated.



**Future IAG Milestones  
Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Alternatives Analysis	11 Apr 95		11 Apr 95
Submit Liquid Removal Final Proposed Action Memorandum	15 May 95		15 May 95
Submit Acceptance of Alternatives Analysis/Proposed Action Memorandum by Public	31 Jul 95		31 Jul 95
Award Equipment System Design Contract	12 Sep 95		12 Sep 95
Finalize Site Designs	24 Oct 95		24 Oct 95
Submit Approval of <i>in situ</i> Vitrification Project Management Plan	14 Nov 95		14 Nov 95
Submit Approval of Site Implementation Plan	14 Nov 95		14 Nov 95

**June Work Activity Status**

Sitewide Treatment Facility activities for the month of June continued as scheduled.

**Surface Water IM/IRA Operations**

Surface Water IM/IRA treatment activities included the following:

Treated water this month:	6,890 gallons
Total treated to date:	24,827,915 gallons

**Planned Work for July**

- Surface Water IM/IRA operations will continue.
- The trench characterization results will be completed.
- The Draft RFI/RI Report comments will be incorporated, and the report will be delivered to the regulatory agencies.
- Offsite Disposal of Field Treatability Unit Sludge - On May 22, 1995, the initial shipment of 72 drums occurred. The remaining 250 drums will be shipped to the waste removal subcontractor by July 30, 1995.

**Problems**

None

**Open Items**

None



## Technical Memoranda

### Project

### OU 2 - 903 Pad, Mound, and East Trenches

TM #1

TM Title

Development of Corrective/Remedial Action Objectives  
(Draft submittal in-process)

TM Status

When preparation was concluded: 27 Jan 95  
Projected date of Draft submittal to EPA/CDPHE: 01 Feb 95  
Actual date of Draft submittal to EPA/CDPHE: 06 Feb 95  
Date comments were received: 23 Mar 95  
Actual date of Draft Final Corrective Remedial Action Objectives  
TM #1 submitted to EPA/CDPHE: 25 Apr 95  
Date comments were received: To be determined

TM #2

TM Title

TM Status

Screening of Remedial Alternatives (Draft submittal)  
When preparation was concluded: 27 Jan 95  
Projected date of Draft submittal to EPA/CDPHE: 01 Mar 95  
Actual date of Draft submittal to EPA/CDPHE: 24 May 95  
Date comments were received from EPA/CDPHE: To be determined

TM #4

TM Title

TM Status

OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test Site 1 (Draft Final submittal in process)  
When Draft preparation was concluded: 08 Sep 94  
Actual date of Draft submittal: 24 Oct 94  
Date comments were received: 10 Nov 94  
When Draft Final preparation was concluded: 09 Mar 95  
Projected date of Final submittal to EPA/CDPHE: 26 May 95  
Actual date of Final submittal to EPA/CDPHE: To be determined  
Date comments were received from EPA/CDPHE: None required

TM #5

TM Title

TM Status

Exposure Scenarios (Draft Final submittal in process)  
When preparation was concluded: 06 Dec 94  
Projected date of Draft Final submittal to EPA/CDPHE: 31 Oct 94  
Actual date of Draft Final submittal: 07 Dec 94  
Date comments were received from EPA/CDPHE: 02 Feb 95 EPA, 03 Mar 95 CDPHE

TM #6

TM Title

TM Status

Modeling  
When preparation was concluded: 15 Jan 93  
Projected date of submittal to EPA/CDPHE: 15 Jan 93  
Actual date of submittal to EPA/CDPHE: 15 Jan 93  
Date comments were received: 01 Apr 93 EPA, 31 Mar 93 CDPHE  
TM approved



TM #7	Surficial Soils
TM Title	When preparation was concluded: 07 Jan 93
TM Status	Projected date of submittal to EPA/CDPHE: 07 Jan 93
	Actual date of submittal: 12 Jan 93
	Date comments were received: 21 Jan 93
	TM approved
 TM #8	
TM Title	Bedrock
TM Status	When preparation was concluded: 15 Mar 93
	Projected date of submittal to EPA/CDPHE: 01 Mar 93
	Actual date of submittal: 15 Mar 93
	Date comments were received: 14 Apr 93 EPA, 14 Apr 93 CDPHE
	TM approved
 TM #8 Addendum	
TM Title	Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)
TM Status	When preparation was concluded: Jun 93
	Projected date of submittal to EPA/CDPHE: Jun 93
	Actual date of submittal: Jun 93
	Date comments were received: FY 93
	TM addendum approved
 TM #9	
TM Title	Chemicals of Concern
TM Status	When preparation was concluded: 08 Aug 94
	Projected date of submittal to EPA/CDPHE: 03 Oct 94
	Actual date of Draft submittal: 30 Aug 94
	Date comments were received: 05 Oct 94
	TM approved
 TM #10	
TM Title	Toxicity Assessment
TM Status	When preparation was concluded: 09 Aug 94
	Projected date of submittal to EPA/CDPHE: 30 Aug 94
	Actual date of Draft submittal: 02 Sep 94
	Date comments were received: 05 Oct 94
	TM approved
 <b>Planned Work for July</b>	<ul style="list-style-type: none"> <li>• Work on the trench characterization IM/IRA operations, the CMS/FS, and on the Treatability Studies will continue.</li> </ul>
 <b>Problems</b>	None
 <b>Open Items</b>	None
 <b><u>2.2.2 OU 2 REMEDIATION</u></b>	
 <b>Scope of Work</b>	
<b>Changes This Period</b>	None



## **2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES**

The contamination at the 903 Pad and Mound Areas is largely attributed to the storage of waste drums in the 1950s and 1960s that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent; these areas may have contaminants that were not removed by the treatment system.

Originally, the Surface Water IM/IRA collected seep and surface water contamination sources and then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because of the small amount of contamination.

A second IM/IRA was established in late 1991. This Subsurface Investigation IM/IRA Environmental Assessment evaluates interim remedial technology actions for removal of residual free-phase Volatile Organic Compound contamination from IHSS 110. The Volatile Organic Compound-removal action involves *in situ* vacuum-enhanced soil vapor extraction technology. The Final Field Report for the OU 2 Detailed Soil Vapor Survey Data was submitted in March 1994, and a pilot test for a soil vapor extraction as specified in the IM/IRA was completed in June 1994. Additionally, extended operations were completed in December 1994, and the Final Pilot Test Report for Test Site No. 1 was issued to the regulatory agencies on November 10, 1994. In March 1995, the implementation of Test Site Nos. 2 and 3 were canceled from the OU 2 soil vapor extraction program.

The Draft OU2 RFI/RI Report was submitted to the Agencies in May 1995. The Final Report will incorporate the Agencies comments and is scheduled to be delivered September 21, 1995. The OU2 RFI/RI Report describes the nature and extent of contamination and assesses the risk to human health of different exposure scenarios.

### **2.2.1 OU 2 ASSESSMENT**

#### **Scope of Work**

Changes This Period                      None

#### **Technical Approach**

Changes This Period                      None

#### **IAG Milestone**

##### **Accomplishments**

Submit Draft Phase II RFI/RI Work Plan (Alluvial)	21 Dec 89
Submit Final Phase II RFI/RI Work Plan (Alluvial)	12 Apr 90
Submit Draft Phase II RFI/RI Work Plan (Bedrock)	05 Feb 91
Submit Final Phase II RFI/RI Work Plan (Bedrock)	02 Jul 91
Submit Field Report for Detailed Soil Vapor Survey	15 Dec 93
Submit Preliminary Draft Phase II RFI/RI Report	16 Dec 93
Submit Draft Phase II RFI/RI Report	24 May 95



**Future IAG Milestones  
Through FY96**

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Phase II RFI/RI Report	09 Aug 93	21 Sep 95	21 Sep 95
Submit Draft CMS/FS Report	04 Nov 93	19 Jul 96	11 Apr 96
Submit Final CMS/FS Report	10 May 94	19 Dec 96	30 Aug 96
Submit Draft Proposed Plan	10 May 94	10 Jan 97	13 Sep 96
Submit Final Proposed Plan	09 Aug 94	25 Mar 97	26 Nov 96
Submit Draft Responsiveness Summary	13 Dec 94	25 Aug 97	06 May 97
Submit Final Responsiveness Summary	16 Mar 95	05 Dec 97	08 Aug 97
Submit Draft Corrective Action Decision/ Record of Decision	16 Mar 95	05 Dec 97	08 Aug 97
Submit Final Corrective Action Decision/ Record of Decision	15 Jun 95	03 Mar 98	04 Nov 97
Submit Corrective Design/ Remedial Design Work Plan	15 Jun 95	03 Mar 98	03 Mar 98
Submit Draft Title II Design	15 Feb 96	03 Nov 98	15 Feb 96
Submit Final Title II Design	14 Jun 96	03 Mar 99	3 Mar 99

**June Work Activity Status**

**Remedial Investigation** - The OU 2 Draft Phase II RFI/RI Report was delivered to the regulatory agencies on May 24, 1995, ahead of schedule. The Agencies will respond to the report by the end of July.

**Trench and Mound Site Characterization** - The OU 2 Trenches and Mound Site Characterization is complete. The data are being processed and the report is expected to be completed in August 1995. The detailed trench characterization is required to select the appropriate methods for remediating the sources of contamination in the trenches.

**Feasibility Study**

**Corrective/Remediation Action Objectives TM #1** - On May 17, 1995, responses to the regulatory agency comments for the Draft Final Corrective/Remedial Action Objectives TM #1 were transmitted to the regulatory agencies.

**Screening of Remedial Technologies and Identification of Remedial Alternatives TM #2** - On May 24, 1995, TM #2, *Screening of Remedial Technologies and Identification of Remedial Alternatives*, was delivered to the regulatory agencies.

**Detailed Analysis of Remedial Alternatives** - Work on the groundwater flow model calibration has been completed and testing has been initiated. The screening of remedial alternatives for soil is in progress.



## **2.1.2 OU 1 REMEDIATION**

### **Scope of Work Changes This Period**

None

### **Technical Approach Changes This Period**

None

### **IAG Milestone Accomplishments**

Submit Draft Proposed Interim Measure (IM)/IRA Decision Document	18 Sep 89
Submit Proposed IM/IRA Decision Document	06 Oct 89
Submit Final IM/IRA Decision Document	05 Jan 90
Begin Phase I-A IM/IRA Construction	15 Jan 90
Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
Submit IM/IRA Implementation Document	22 Feb 91
Begin Phase II-A IM/IRA Construction	01 Apr 91
Begin IM/IRA Testing	05 Aug 91
Begin Phase II-B IM/IRA Construction	03 Sep 91
Complete IM/IRA Construction (891 Treatment Building)	02 Mar 92
Complete IM/IRA Construction (French drain)	13 Apr 92

### **Future IAG Milestones Through FY96**

None

### **June Work Activity Status**

#### **Interim Measure/Interim Remedial Action (IM/IRA) Treatment Facility**

Normal water treatment continues.

A letter was received from the EPA indicating that treatment of groundwater collected by the French Drain will not be required, if laboratory analysis of representative samples collected from that water shows that the discharge standards of the OU1 Interim Measure/Interim Remedial Action (IM/IRA) Decision Document are not exceeded. The actual procedures that will be used to accomplish this need to take into account various factors such as holding tank capacity, maximum volumes collected by the French Drain, and analytical turnaround time, in order to effectively segregate the groundwater collected by the French Drain for representative sampling of that water. Contaminated water that is being pumped from the collection well still needs to be treated and must not be mixed with the French Drain water unless both these waters exceed discharge standards.

June water treatment totals	
Treated groundwater this period	124,555 gallons
Total treated to date: (through 30 June 95)	2,977,103 gallons



**Planned Work for July****Interim Measure/Interim Remedial Action (IM/IRA) Treatment Facility**

- Normal operations will continue.
- Continue to investigate procedures, systems, and capabilities that will be needed to accomplish the proposal for discontinuing French Drain water treatment. Areas of concern include holding tank capacity, maximum volumes collected by the French Drain, and analytical turnaround time, in order to effectively segregate the ground water collected by the French Drain for representative sampling of that water.

**Problems**

None

**Open Items**

Combination of OU1 and OU2 systems.

Construction of Sitewide water treatment.

Modifications to OU1 and OU2 IM/IRA Decision Documents.



## SECTION 2.0 PROJECT STATUS

### 2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of the Rocky Flats Environmental Technology Site, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the site's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up Operable Unit (OU) 1 were investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Measure (IM)/Interim Remedial Action (IRA) at OU 1 involved the construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater that flows from the OU 1 area. The near-surface water is treated at the 891 treatment facility, which was designed for this purpose, and is released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. The IRA construction was completed in April 1992. A Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/Remedial Investigation (RI) Report was completed in November 1993. To determine the final remedial action, the Corrective Measure Study/Feasibility Study (CMS/FS) was developed and submitted to the regulatory agencies in February 1995.

#### 2.1.1 OU 1 ASSESSMENT

##### Scope of Work

Changes This Period                      None

##### Technical Approach

Changes This Period                      None

##### Interagency Agreement

##### (IAG) Milestone

##### Accomplishments

Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Submit Final Phase III RFI/RI Work Plan	31 Oct 90
Submit Draft Phase III RFI/RI Report	28 Oct 92
Submit Final Phase III RFI/RI Report	15 Nov 93
Submit Revised Phase III RFI/RI Report	15 Jun 94
Submit Draft Corrective Measures Study (CMS)/FS	25 Aug 94
Submit Draft Remedial Action Plan/Proposed Plan	13 Feb 95
Submit Final CMS/FS	13 Feb 95
Submit Final Proposed Plan	25 May 95

##### Future IAG Milestones

##### Through Fiscal Year (FY) 96

<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Draft Responsiveness Summary	06 May 94	19 Sep 95	19 Sep 95
Submit Final Responsiveness Summary	03 Aug 94	22 Dec 95	22 Dec 95
Submit Draft Corrective Action Decision/ Record of Decision	03 Aug 94	22 Dec 95	22 Sep 95*
Submit Final Corrective Action Decision/ Record of Decision	01 Nov 94	29 Mar 96	22 Dec 95*
Submit Draft Title II Design	05 Jul 95	05 Sep 95	30 Nov 96*



<u>Milestone Name</u>	<u>Planned Date</u>	<u>Approved Extension Status</u>	<u>Forecast Date</u>
Submit Final Title II Design	03 Oct 95	03 Oct 95	21 Nov 96*
Submit Final Corrective Action Decision/Record of Decision	01 Nov 94	29 Mar 96	29 Mar 96*
Submit Corrective Design/Remedial Design Work Plan	01 Nov 94	29 Mar 96	29 Mar 96*
Begin Corrective/Remedial Action Construction	07 May 96	07 May 96	26 Jun 97*

- A Baseline Change Proposal to change the baseline is in progress.

#### **June Work Activity Status**

Responses to regulatory agency Proposed Plan comments were prepared and forwarded.

#### **Technical Memoranda (TM)**

##### Project

OU 1 - 881 Hillside

##### TM #10

##### TM Title

##### TM Status

Preliminary Remediation Goals

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date comments were received: EPA 01 June 94, CDPHE 26 Jul 94

##### TM #11

##### TM Title

##### TM Status

Alternative Array

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date when comments were received: EPA 24 May 94, CDPHE 06 Jun 94

#### **Planned Work for July**

- Provide assistance and technical support to resolve the disputed items in the Proposed Plan
- Commence the public comment period on the Proposed Plan.

#### **Problems**

CDPHE has essentially approved all of our suggested resolutions except for the locations of the monitoring wells and action levels. Since the location of these wells and action levels have been at contention between the regulatory agencies for several months, with little chance of being resolved at the technical staff level, DOE will not achieve closure of OU1 until the impasse is resolved. DOE has invoked Part 12 of the IAG, initiating the dispute resolution process based on the disapproval of the Proposed Plan and resolution of comments.

#### **Open Items**

Approval of the Proposed Plan



## **SECTION 1.0 INTRODUCTION**

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for June 1995. This program implements the Interagency Agreement (IAG) among the U. S. Department of Energy (DOE), the U. S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess and remediate, where necessary, contaminated areas at or adjacent to the DOE's Rocky Flats Environmental Technology Site near Golden, Colorado. This agreement was signed on January 22, 1991, and the work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report contains highlights of significant achievements, milestone information, and any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU), as well as other program activities, are presented in Section 2.0. As required by Paragraph 210 of the IAG, Section 3 contains the schedules for routine environmental sampling. As required by Paragraph 13 of the IAG, Section 4 contains a list that identifies the subcontractors performing work on the program.



# NEAR-TERM IAG TABLE 6 MILESTONES

<u>OU #</u>	<u>IAG</u> <u>Milestone Description</u>	<u>Date Scheduled</u> <u>to EPA/CDPHE</u>	<u>Status</u>
4	Submit IM/IRA Responsiveness Summary	9-Jun-95	On schedule
6	Submit Draft Phase I RFI/RI Report	02-Oct-95	Extension approved.
10	Submit Draft Phase II RFI/RI Work Plan	27-Jun-95	On schedule
9	Submit Final Phase II RFI/RI Work Plan	7-Aug-95	See Footnote 1
4	Phase I Final IM/IRA DD and Final Responsiveness Summary	29-Aug-95	See Footnote 2
7	Submit Draft Phase I Proposed IM/IRA Decision Document	31-Aug-95	On schedule
1	Draft Responsiveness Summary	19-Sep-95	On schedule
11	Final Combined Phases RFI/RI Report	19-Sep-95	Ahead of Schedule
2	Submit Final Phase II RFI/RI Report	21-Sep-95	On schedule
9	Submit Final Phase I Proposed IM/IRA Decision Document	27-Sep-95	See Footnote 1
15	Submit Final Corrective Action Decision/Record of Decision	30-Sep-95	On schedule
11	Submit Draft Phase I Proposed IM/IRA Decision Document	10-Oct-95	Proposed Elimination
10	Submit Final Phase I Proposed IM/IRA Decision Document	24-Oct-95	See Footnote 1
3	Submit Draft Phase I RFI/RI Report	30-Oct-95	Ahead of Schedule
5	Submit Draft Phase I RFI/RI Report	1-Nov-95	On schedule
10	Submit Final Phase II RFI/RI Work Plan	21-Nov-95	See Footnote 1
4	Final IM Title II Design	18-Dec-95	See Footnote 2
1	Final Responsiveness Summary	22-Dec-95	On schedule
1	Draft Corrective Action Decision/ Record of Decision	22-Dec-95	On schedule
7	Submit Draft Final Phase I IM/IRA Decision Document	5-Jan-96	On schedule
9	Submit IM/IRA Responsiveness Summary	8-Feb-96	See Footnote 1
6	Submit Final Phase I RFI/RI Report	21-Feb-96	On schedule
10	Submit IM/IRA Responsiveness Summary	6-Mar-96	See Footnote 1
11	Submit Final Phase I Proposed IM/IRA Decision Document	14-Mar-96	Proposed Elimination
1	Submit Final Corrective Action Decision/ Record of Decision	29-Mar-96	On schedule
1	Submit Corrective Design/Remedial Design Work Plan	29-Mar-96	On schedule
7	Submit IM/IRA Responsiveness Summary	1-Apr-96	On schedule
5	Submit Final Phase I RFI/RI Report	2-Apr-96	On schedule
4	Submit Draft Phase II RFI/RI Report	16-Apr-96	See Footnote 2
9	Submit Final Phase I IM/IRA Decision Document	7-May-96	See Footnote 1
7	Submit Draft IM Title II Design	30-May-96	On schedule
2	Submit Corrective Design/Remedial Design Work Plan	3-Mar-98	Extension requested
2	Submit Draft Title II Design	3-Nov-98	On schedule

1 This milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs are under a Department of Energy (DOE) Stop Work Order directive until agreement can be reached with the regulatory agencies on the IA OU reconfiguration.

2 This milestone will be missed because of reevaluation of the project's technical scope and funding restraints. A forecast date is not known.



## **PROBLEMS AND PROGRAMMATIC ISSUES**

The Stop Work Order issued in March 1995 for the Industrial Area OUs will delay intrusive field activities planned for the fourth quarter of the Fiscal Year 95 and all subsequent activities.

DOE has initiated the dispute resolution process to resolve the impasse with CDPHE over the disapproval of the OU 1 Proposed Plan and resolution of comments.

CDPHE has not agreed to support placement of pondcrete under the OU 4 engineered barrier in lieu of off-site disposal. Failure to resolve this issue will result in missed milestones, schedule delays, and increased costs.



**INTERAGENCY AGREEMENT (IAG)  
PERFORMANCE INDICATORS FOR MONTHLY REPORT**

<u>Number of IAG Table Six Milestones To Date</u>	<u>Current Fiscal Year (FY) 95 (10/1/94 - 9/30/95)</u>	<u>Since IAG Inception</u>
Scheduled (including approved extensions)	15	143
Met	13	109
Extensions Granted	15	64
Enxtensions Denied	0	8
Remaining this FY95	20	N/A
Added	1	11
Deleted	2	6

Deliverables in Review  
by Regulators

<u>Project</u>	<u>Date Submitted/ Completed</u>	<u>Date review was completed EPA</u>	<u>CDPHE</u>
OU 1 Revised Draft Proposed Plan	13 Feb 95		
OU 7 Revised Proposed Action Memoranda	15 Jun 95		

IM/IRA Status

	<u>Gallons Treated</u>
OU 1 881 Hillside Treatment	2,977,103 gallons
OU 2 Surface Water IM/IRA Treatment	24,827,915 gallons
OU 4 Water Management Tasks (Interceptor Trench System and Pond Water)	9,111,788 gallons

<u>IAG Document Deliverables Due Next Six Months</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 1 Draft Responsiveness Summary	19 Sep 95	19 Sep 95	Extension request in progress
OU 2 Final Phase II RFI/RI Report	21 Sep 95	21 Sep 95	On schedule
OU 3 Draft Phase I RFI/RI Report	30 Oct 95	15 Sep 95	Ahead of schedule
OU 4 Final Phase I IM/IRA Decision Document and Final Responsiveness Summary	29 Aug 95	29 Aug 95	On schedule
OU 5 Draft Phase I RFI/RI Report	1 Nov 95	1 Nov 95	On schedule
OU 6 Draft Phase I RFI/RI Report	2 Oct 95	2 Oct 95	On schedule
OU 7 Draft Phase I Proposed IM/IRA Decision Document	31 Aug 95	31 Aug 95	On schedule
OU 9 Final Phase II RFI/RI Work Plan	7 Aug 95	To be determined	See footnote 1
OU 9 Final Phase I Proposed IM/IRA Decision Document	27 Sep 95	To be determined	See footnote 1
OU 10 Draft Phase II RFI/RI Work Plan	27 Jun 95	To be determined	See footnote 1
OU 10 Final Phase I Proposed IM/IRA Decision Document	24 Oct 95	To be determined	See footnote 1
OU 10 Final Phase II RFI/RI Work Plan	21 Nov 95	To be determined	See footnote 1
OU 11 Draft Phase I Proposed IM/IRA Decision Document	10 Oct 95	10 Oct 95	Proposed elimination
OU 15 Final Corrective Action Decision/ Record of Decision	30 Sep 95	30 Sep 95	New milestone



## **EXECUTIVE SUMMARY**

### **SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR JUNE 1995**

On June 5, 1995 the Revised Draft PAM for the Consolidated Sitewide Water Treatment Facility at Building 891 in OU 1 was delivered to DOE for transmittal to the regulators. Construction of support facilities for the consolidation has begun at Building 891.

On June 9, 1995 the IM/IRA Draft Responsiveness Summary for OU 4, an IAG milestone, was delivered to the regulators.

On June 15, 1995 the Modified PAM for Seep Collection and Treatment at OU 7 was transmitted to EPA and CDPHE, meeting the IAG milestone.

On June 13, 1995 regulatory agency approval of the Final Combined Phases RFI/RI report for OU 11 was granted.

On June 19, 1995 Certification of RCRA Clean Closure for OU 11 was submitted to CDPHE.

On June 20, 1995 the Final Proposed Plan/Draft Modification of the Colorado Hazardous Waste Permit for OU 11 was submitted to the regulatory agencies. The Public Comment Period began June 28, 1995.



<u>Overdue Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 8 Draft Phase I RFI/RI Report	14 Feb 94	To be determined	See footnote <sup>1</sup>
OU 8 Final Phase I RFI/RI Report	12 Jul 94	To be determined	See footnote <sup>1</sup>
OU 9 Draft Phase I RFI/RI Report	11 Apr 94	To be determined	See footnote <sup>1</sup>
OU 9 Final Phase I RFI/RI Report	6 Sep 94	To be determined	See footnote <sup>1</sup>
OU 9 Draft Phase II RFI/RI Work Plan	10 Mar 95	To be determined	See footnote <sup>1</sup>
OU 9 Draft Phase I Proposed IM/IRA Decision Document	1 May 95	To be determined	See footnote <sup>1</sup>
OU 10 Draft Phase I RFI/RI Report	25 Aug 94	To be determined	See footnote <sup>1</sup>
OU 10 Final Phase I RFI/RI Report	30 Jan 95	To be determined	See footnote <sup>1</sup>
OU 10 Draft Phase I Proposed IM/IRA Decision Document	26 May 95	To be determined	See footnote <sup>1</sup>
OU 12 Draft Phase I RFI/RI Report	20 Apr 94	To be determined	See footnote <sup>1</sup>
OU 12 Final Phase I RFI/RI Report	15 Sept 94	To be determined	See footnote <sup>1</sup>
OU 13 Draft Phase I RFI/RI Report	8 Aug 94	To be determined	See footnote <sup>1</sup>
OU 13 Final Phase I RFI/RI Report	11 Jan 95	To be determined	See footnote <sup>1</sup>
OU 14 Draft Phase RFI/RI Report	20 Dec 94	To be determined	See footnote <sup>1</sup>
OU 14 Final Phase I RFI/RI Report	23 May 95	To be determined	See footnote <sup>1</sup>

<u>Extended Deliverables</u>	<u>IAG Approved Planned Date</u>	<u>Current Projected Completion Date</u>	<u>Comments</u>
OU 2 Corrective/Remedial Design Work Plan	15 Jun 95	3 Mar 98	Extension approved
OU 2 Draft Title II Design	15 Feb 96	3 Nov 98	Extension approved
OU 2 Final Title II Design	14 Jun 96	3 Mar 99	Extension approved
OU 2 Begin Corrective/Remedial Action Construction	20 Jan 97	11 Oct 99	Extension approved
OU 2 Complete Corrective/Remedial Action Construction	20 Jul 98	27 Apr 01	Extension approved
OU 2 Submit Performance Assessment Report	15 Oct 98	26 Oct 01	Extension approved

<sup>1</sup> The milestone is incorporated into the proposed Industrial Area (IA) Operable Units' (OUs) Reconfiguration Plan that is currently under review. Also, all IA OUs (OUs 8,9,10,12,13, and 14) are under a Stop Work Order directive received March 7, 1995 that was agreed to by the regulatory agencies and DOE.



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